

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-008272**Date Inspected:** 08-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** You Qi Guo, Tu Jun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

**Trial Assembly Area**

This QA Inspector, George Goulet, randomly observed the following in response to Bolting Inspection Notification Sheet No. 00090:

Segment 4AE, suspender bracket at panel point 26:

ZPMC workers performed final bolt tightening verification at the direction of ZPMC QC Inspector Hu Mei Gang (QC1) using ZPMC calibrated wrench #XO-584. No less than 10% of the ASTM A325 bolt sets at each connection were torque tested, with a minimum of one bolt set tested at each connection. QC1 provided this QA Inspector, George Goulet, with the following information regarding the bolt sets installed at this location. This QA Inspector, George Goulet, observed ZPMC's Bolt Test Log for SFOBB (RoCap list), listing the RoCap Set numbers, bolt set size, and the N.M test result for torque tightening purposes. The information presented by QC1 and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list.

RC Set No. DHGM240020 – M24-2.5x75 – test result 600N.M

RC Set No. DHGM270001 – M27-3.0x85 – test result 853N.M

RC Set No. DHGM240015 – M24-2.5x85 – test result 517N.M

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

The torque of the above noted bolt sets was verified by torque testing with the a calibrated wrench with the wrench setting displayed respectively as 600, 855, and 520N.M. This QA Inspector, George Goulet, concurred with QC1 for the issuance of green tag numbers.

This QA Inspector, George Goulet, randomly observed the following in response to Bolting Inspection Notification Sheet No. 00089:

Segment 1BW, longitudinal diaphragms, north and south, from panel points 10.5 to 12.5 and segment 2AW, longitudinal diaphragms, north and south, from panel points 13 to 14:

ZPMC workers performed final bolt tightening verification at the direction of ZPMC QC Inspector Hu Mei Gang (QC1) using ZPMC calibrated wrench #XO-584. No less than 10% of the ASTM A325 bolt sets at each connection were torque tested, with a minimum of one bolt set tested at each connection. QC1 provided this QA Inspector, George Goulet, with the following information regarding the bolt sets installed at this location. This QA Inspector, George Goulet, observed ZPMC's Bolt Test Log for SFOBB (RoCap list), listing the RoCap Set numbers, bolt set size, and the N.M test result for torque tightening purposes. The information presented by QC1 and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list.

RC Set No. DHGM240020 – M24-2.5x75 – test result 600N.M

RC Set No. DHGM240028 – M24-2.5x90 – test result 540N.M

RC Set No. DHGM240022 – M24-2.5x100 – test result 527N.M

RC Set No. DHGM240024 – M24-2.5x120 – test result 553N.M

The torque of the above noted bolt sets was verified by torque testing with the a calibrated wrench with the wrench setting displayed as 600N.M at the option of QC1. This QA Inspector, George Goulet, concurred with QC1 for the issuance of green tag numbers.

This QA Inspector, George Goulet, also randomly observed the following in response to Bolting Inspection Notification Sheet No. 00089:

Segment 1BW, southernmost angle, which is one of three, between I-rib and floor at panel point 11.5:

ZPMC workers performed final bolt tightening verification at the direction of ZPMC QC Inspector Hu Mei Gang (QC1) using ZPMC calibrated wrench #XO-584. One of the ASTM A325 bolt sets at each end of the angle were torque tested. QC1 provided this QA Inspector, George Goulet, with the following information regarding the bolt sets installed at this location. This QA Inspector, George Goulet, observed ZPMC's Bolt Test Log for SFOBB (RoCap list), listing the RoCap Set numbers, bolt set size, and the N.M test result for torque tightening purposes. The information presented by QC1 and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list.

RC Set No. DHGM240005 – M22-2.5x75 – test result 473N.M

The torque of the above noted bolt sets was verified by torque testing with the a calibrated wrench with the wrench setting displayed as 475N.M. This QA Inspector, George Goulet, concurred with QC1 for the issuance of green

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

tag numbers.

### Bay 11

This QA Inspector, George Goulet, also randomly observed the following work in progress in Bay 11:

FCAW welding of weld joints ESD1-FDSA4-2C/D-23, 24 located on east tower, lift 4, skin D. Welder was identified as 070140. ZPMC QC was identified as CWI You Qi Guo (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Chen Hong Yun, who was not a CWI. The welding variables recorded by QC3 and QC3's assistant appeared to comply with WPS-B-T-4332-Tc-P5-F.

FCAW welding of weld joints ESD1-FDSA4-2C/D-3, 4 located on east tower, lift 4, skin D. Welder was identified as 070212. ZPMC QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Chen Hong Yun, who was not a CWI. The welding variables recorded by QC3 and QC3's assistant appeared to comply with WPS-B-T-4332-Tc-P5-F.

### Bay 10

This QA Inspector, George Goulet, also randomly observed the following work in progress in Bay 10:

FCAW welding of weld joints NSD1-FDSA4-3D/D-49, 50 located on north tower, lift 4, skin D. Welders were identified respectively as 057226, 050041. ZPMC QC was identified as CWI Tu Jun (QC3). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Yu Zhi Lai, who was not a CWI. The welding variables recorded by QC3 and QC3's assistant appeared to comply with WPS-B-T-2332-Tc-P5-F.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

### Summary of Conversations:

As noted above and this QA Inspector, George Goulet, asked each QC monitoring the welding if all the welding variables observed by QC appeared to comply with the appropriate WPS, including the preheat requirements according to thickness of the thickest member being welded. Each QC monitoring the welding showed this QA Inspector, George Goulet, that QC was carrying the proper temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all QC observed did appear to comply.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

---

<b>Inspected By:</b>	Goulet, George	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon, Albert	QA Reviewer

---